

No. 882,084.

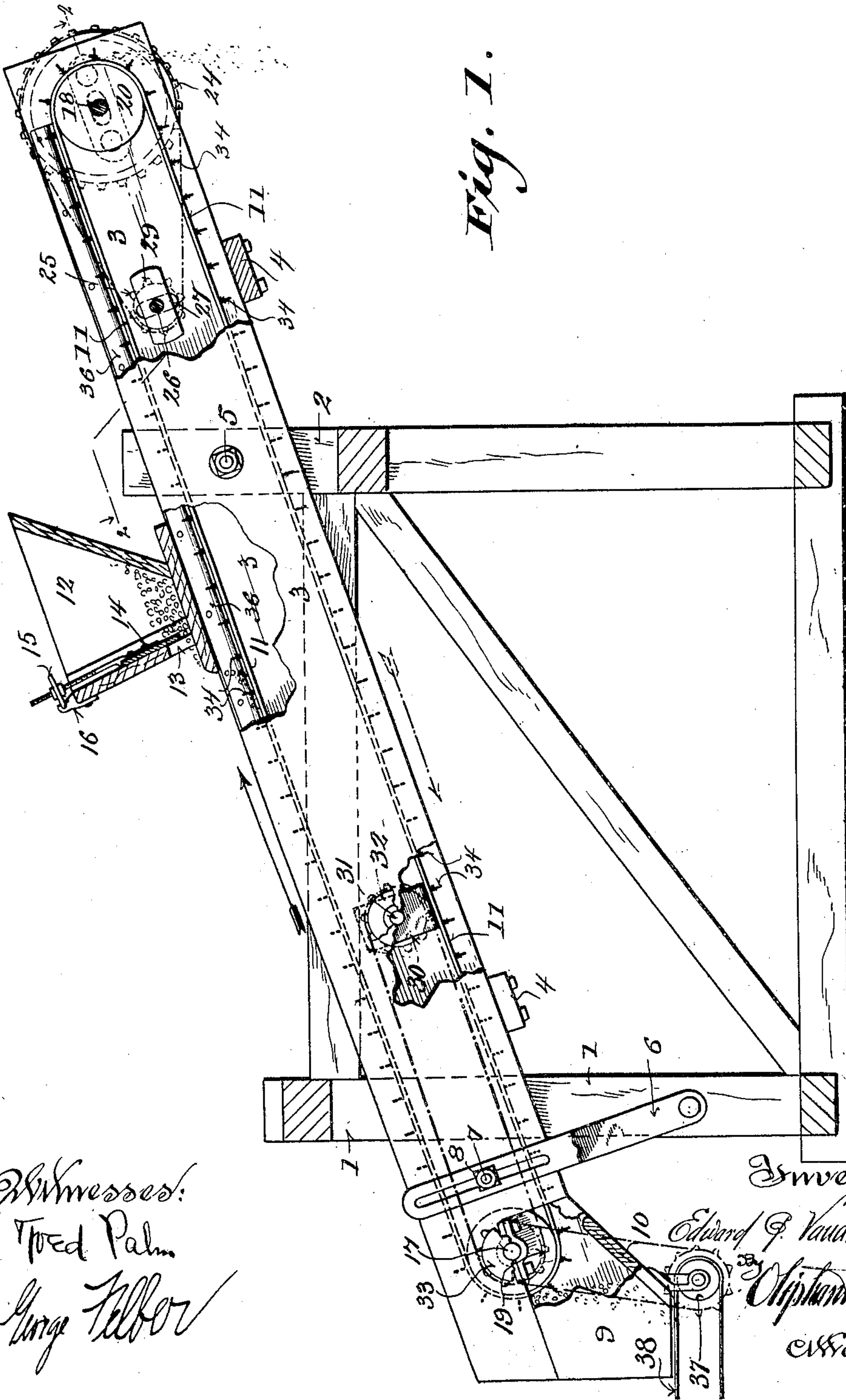
PATENTED MAR. 17, 1908.

E. J. VAUDREUIL.
SEPARATOR.

APPLICATION FILED JULY 10, 1907.

2 SHEETS—SHEET 1.

Fig. 1.



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APPLICATION FILED JULY 10, 1907.

2 SHEETS—SHEET 2.

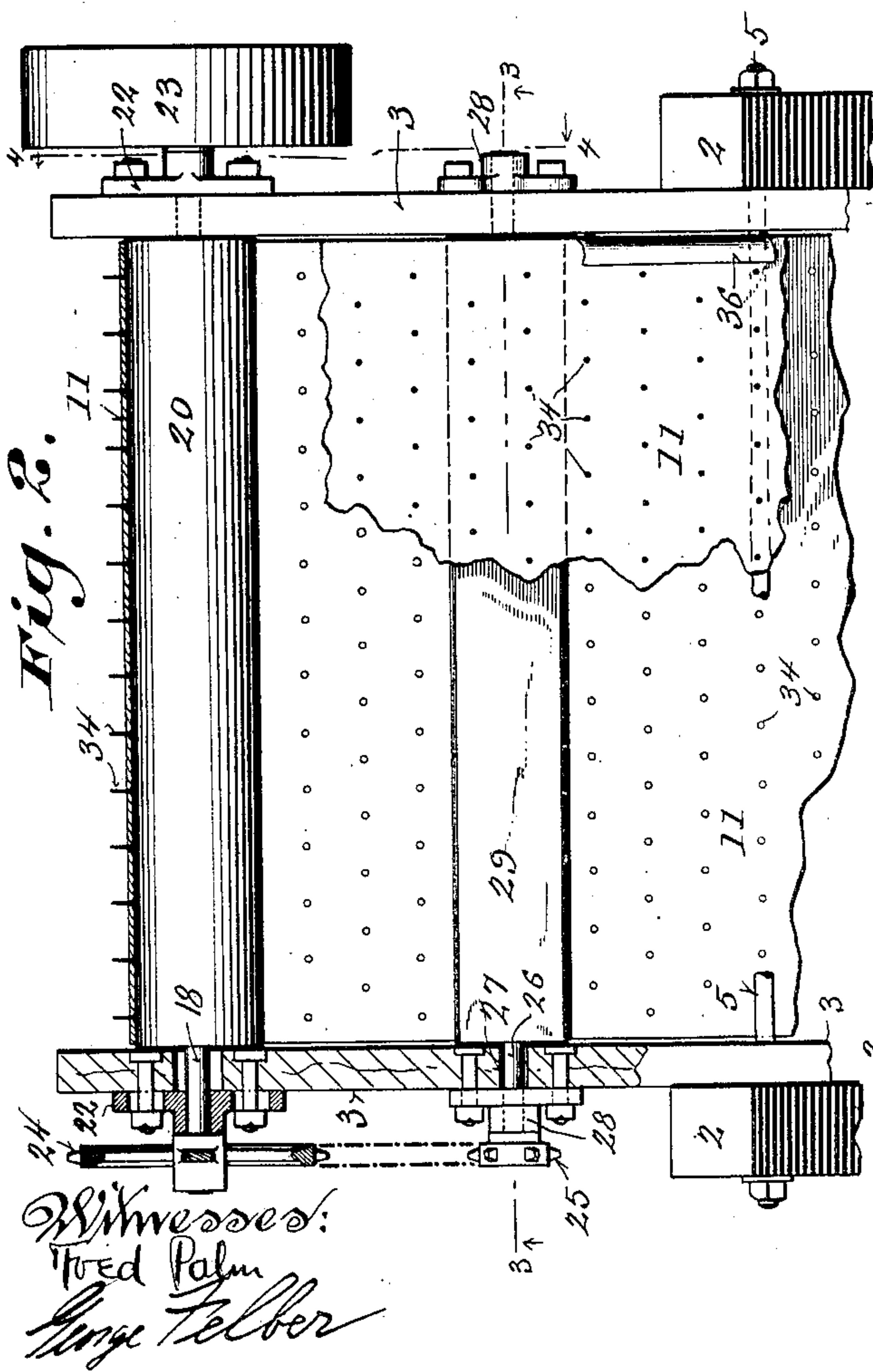


Fig. 4.

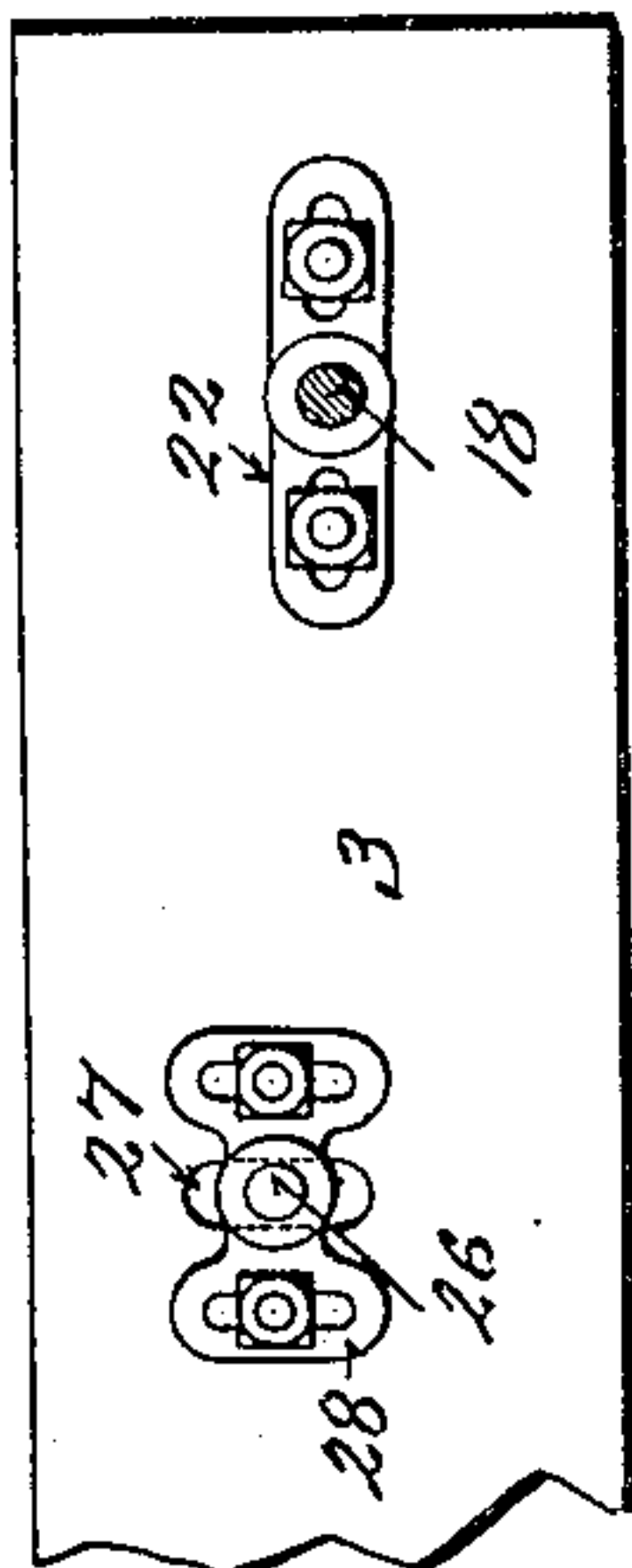
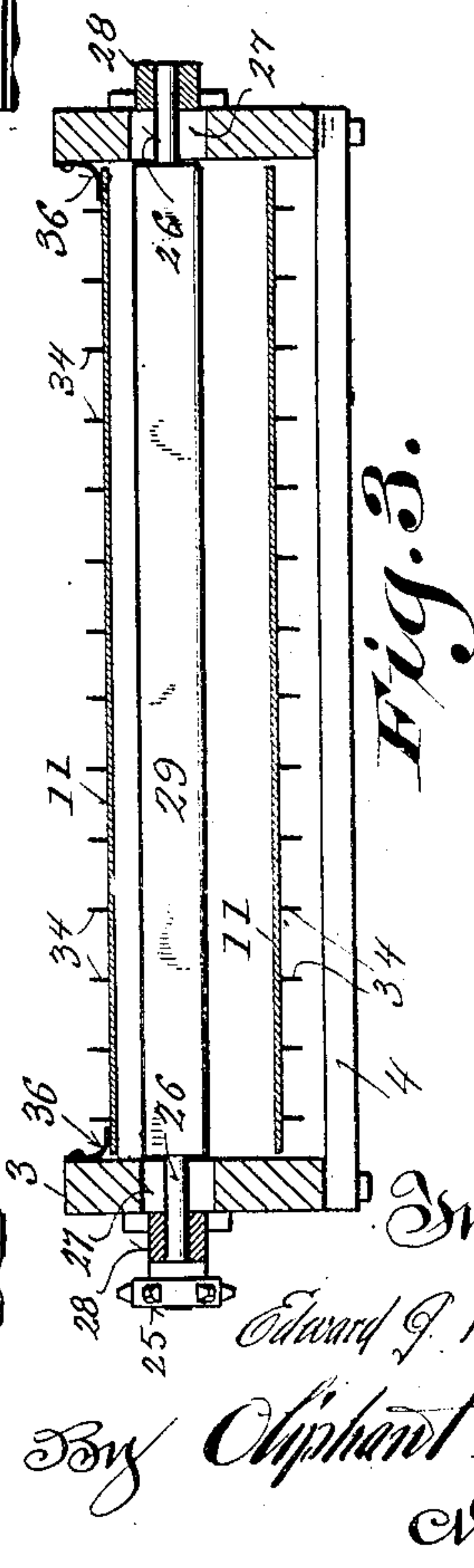
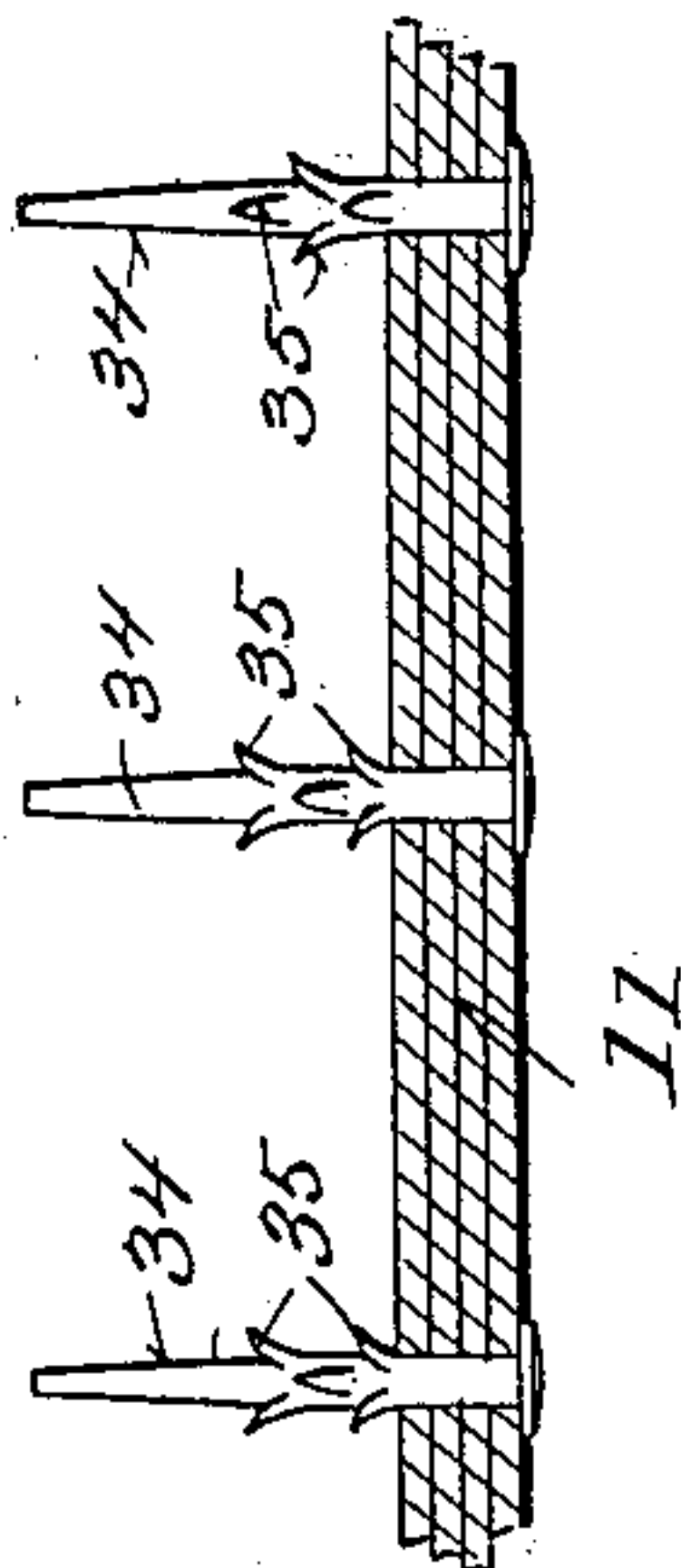


Fig. 5.



UNITED STATES PATENT OFFICE.

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No. 882,084.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EDWARD J. VAUDREUIL, a citizen of the United States, and resident of Two Rivers, in the county of Manitowoc and State of Wisconsin, have invented certain new and useful Improvements in Separators; and I do hereby declare that the following is a full, clear, and exact description thereof.

10 The object of my invention is to provide a simple, economical and efficient separator for pulse, berries or the like.

15 The invention is particularly designed for cleaning hulled peas preparatory to canning, the same being passed through the machine to separate the sound peas from those that are split or flat, together with any foreign substance.

20 Said invention therefore consists in certain peculiarities of construction and combination of parts as hereinafter fully described with reference to the accompanying drawings and subsequently claimed.

25 In the drawings: Figure 1 represents a side elevation of a separator embodying the features of my invention, parts being in section and other parts broken away to better illustrate the mechanical details; Fig. 2, a detail section plan view of the screening-end of the machine, the section being indicated by line 2—2 of Fig. 1; Fig. 3, a cross-section on line 3—3 of Fig. 2; Fig. 4, a detail section on line 4—4 of Fig. 2, and Fig. 5, an enlarged cross-section of a portion of the belt, 35 illustrating the preferred form of pins therein, and means of securing the same.

Referring by numerals to the drawings, 1 and 2 indicate front and rear standards respectively of a suitably braced frame, between which standards are fitted side-boards 3 connected by brace-strips 4. The side-boards and brace-strips constitute a skeleton trough that is pivoted to the rear frame standards 2 by a rod 5 and nuts thereon, 45 which rod passes through the standards together with said side-boards. The trough is adjustably set and held at an inclination by means of strips 6, which strips are pivoted to the front standards 1 and are slotted for the reception of bolts or studs 7 that project from the trough, the said bolts being threaded to receive suitable clamping-nuts 8 that bind the parts together.

55 The front or lower end of the trough has secured thereto a chute 9, upon the inclined

bottom 10 of which the cleansed peas are delivered from an endless belt 11, the construction and arrangement of the belt being hereinafter described. Intermediate of the trough-ends and secured to the upper edges 60 of its side-boards is a hopper 12, having a feed-opening 13 therein, the area of which feed-opening is adjusted by means of a gate 14, there being a threaded stem secured to the gate and in threaded-connection with an 65 adjusting-wheel 15, the same being confined by a bracket 16 secured to the hopper-wall. Spindles 17 and 18 of rollers 19 and 20, are journaled in boxes 21, 22, respectively at the ends of the trough, the rear box 22 which 70 carries the spindle of roller 20 being adjustable for the purpose of regulating the tension of the endless belt 11, which belt is mounted upon the rollers. Roller 19 is preferably an idler while roller 20 is driven by a pulley 23 75 fast on its spindle, the opposite end of the spindle being provided with a sprocket-wheel 24 that is in link-belt connection with a smaller sprocket-wheel 25 of a shaft 26. This shaft projects through vertically disposed slotted apertures 27 of the trough side-boards, and is journaled in adjustable boxes 28 secured thereto. A revoluble flat beater 29 is secured to the shaft 26 intermediate of the trough-sides, and is arranged to contact 85 with the upper or working side of the endless belt, so as to impart a vibratory motion thereto, the beater being adjacent to the rear or screening discharge end of the belt. A rectangular faced beater 30 is mounted on a 90 shaft 31 having its journals in the sides of the trough and near the front end thereof. This beater is arranged to contact with the lower or slack side of the belt, imparting to said belt a vibratory motion similar to that described in connection with the first mentioned beater. The beater 30 is driven by a sprocket-wheel 32 fast on its shaft and in link-belt connection with a sprocket-wheel 33 secured to the idle-roller spindle. 100

The endless belt 11 is preferably composed of layers of canvas stitched together and is provided with series of rows of headed pins 34, which pins project through the canvas. The shanks of the pins, directly adjacent the 105 canvas, through which they project, are provided with a series of burs 35, which burs extend only for a portion of the length of the exposed pins, and serve to catch any small particles of trash such as leaves, thistles, 110

etc., the pins being positioned in rows so that they are staggered with relation to the next adjacent row.

To prevent the material which is fed upon the belt from dropping between the edges of the same and those of the trough side-boards, the latter are provided with valance strips 36 of rubber or other suitable material, the free edges of said strips being positioned so that they will hug the upper face of the belt just inside the lines of pins, thus effectually sealing the joints as best shown in Fig. 3 of the drawings.

In the operation, the upper or working-face of the belt travels upgrade, (as indicated by the arrow in Fig. 1) and as the peas are fed from the hopper, those which are smooth, sound and perfect, will gradually find their way through the maze of pins to the chute and be discharged, traveling by gravity in the opposite direction from that of the belt. Should any of the perfect peas be caught by the pins, they will be dislodged by the vibrations of the beater 29 before said peas could pass over the rear end of the belt. The broken split or flat peas however would not roll down the inclined belt, but would be caught by the sharp burs of the pins as would also any foreign substances such as leaves thistles, etc., and be carried up with the traveling belt until discharged over the upper roller 20. Such trash as would not clear by gravity from the inverted belt-pins would be shaken from the bottom or slack side of the belt by means of the beater 30, after which said pins pass over the idler-roller and upward. The beater 29 being adjustable, may be set so as to produce a greater or less degree of vibratory motion to the belt, it being positioned in proportion to the inclination of the belt and the condition of the material being cleaned.

While I have shown and described minute details of construction as carried out in the drawings, it is understood that the structural features mentioned form no part of my invention, except as far as they pertain to a practical device, the essential features of which are the suspended inclined belt traveling up the inclination and having a pin-surface, together with means for imparting vibratory motion to the belt. It is also understood that in some instances if desired, the heads of the belt-pins may be covered or backed up with another layer of canvas to add rigidity to same.

To complete the cleaning process, it has been found desirable to discharge the screened peas upon an endless sorting-belt 38, which

belt passes over suitable rollers 37, only one of which is shown, and in this instance the said roller is journaled in bearings secured to the chute 9 and driven by a chain-belt from spindle 17. By utilizing a sorting-belt of this description, operators are enabled to cull out any foreign matter, such as thistles or the like, which would not be caught by the separator while the peas are being conveyed thereby to a suitable receptacle.

I claim:

1. A separator comprising a driven inclined endless belt, having pins extending therethrough provided with burred shanks, a feed-hopper over the upper stretch of the belt intermediate of its ends, and a beater adapted to oppose the inner surface of said upper belt stretch located intermediate of the feed-hopper and the upper terminal of the belt.

2. A separator comprising a driven inclined endless belt, having pins extending therethrough provided with burred shanks, a feed-hopper over the upper stretch of the belt intermediate of its ends, the material fed being delivered by gravity over the lower terminal of said belt, means for driving the upper stretch of the belt in the opposite direction from the gravity-flow of the material, and a beater adapted to oppose the inner surface of said upper belt stretch located intermediate of the feed-hopper and the upper terminal of the belt.

3. A separator for pulse or the like comprising a frame, an inclined skeleton trough hung in the frame, means for adjusting the trough inclination in connection with the frame, a feed-hopper above the trough intermediate of its ends, rollers journaled in the trough-ends, driving-means for one of the rollers, an endless belt carried by the rollers, a series of pins projecting from the belt having burred lower shanks a revoluble beater journaled in the trough adjacent to its high end and arranged to oppose the inner surface of the upper belt stretch, driving means for the beater, a second beater journaled in said trough and arranged to oppose the inner surface of the lower belt-stretch, and means for driving the second beater.

In testimony that I claim the foregoing I have hereunto set my hand at Two Rivers in the county of Manitowoc and State of Wisconsin in the presence of two witnesses.

EDWARD J. VAUDREUIL

Witnesses:

P. M. FARRELL,
GEO. H. DICKE.